REMARKS

Claims 3, 8 and 9 have been canceled. As such, Claims 1, 4-7, and 10-17 are currently pending in the application. Claims 1 and 4-7 have been amended to more particularly define the molecular adjuvant. The claim amendments are supported by the specification and do not contain new matter.[1]

I. 35 U.S.C. 112, Second Paragraph

Reconsideration is requested of the rejection of claim 7 under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Office states that "[i]n claim 7 'said targeting moiety' lacks antecedent basis."[2]

Claim 7 has been amended, replacing 'targeting moiety' with 'selective agonist.' Claim 7 depends from claim 1, which is directed toward a molecular adjuvant where one component of the adjuvant is a C5a response selective agonist. As such, the 'selective agonist' referenced in claim 7 has proper antecedent basis in view of claim 1. Applicants respectfully request reconsideration and withdrawal of this rejection.

II. 35 U.S.C. 102(a) and (e) Rejections

A. *The molecular adjuvant of claims 1, 10-11, 13 and 16-17 are not anticipated by the composition disclosed in Romet-Lemonne et al. in light of Guyre et al.*

Reconsideration is requested of the rejection of claims 1, 10-11, 13 and 16-17 under 35 U.S.C. 102(e) as being anticipated by Romet-Lemonne et al. (U.S. 6,248,332)

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[1]Claim 1 has been amended by replacing "targeting ligand" with "C5a response selective agonist". Further, "characteristic determinant" has been replaced with "C5a receptor". There is support in the specification for these amendments. For example, in the specification on page 12, lines 24-28, "... a [molecular adjuvant] comprises at least one antigenic moiety linked to a targeting and activating moiety that binds specifically to at least one characteristic determinant on the *selected* antigen presenting cell type." Further, as defined in the specification on page 13, lines 7-15, the targeting and activating moiety binds to a characteristic determinant, which "signifies an epitope that serves to identify a *particular population of antigen presenting cells* and *distinguish* it from other antigen presenting cell populations. Cell-associated determinants include...membrane receptors." Claims 4-7 have been amended to be consistent with claim 1. New claim 26 is supported by page 9 of the specification.

[2]Paper 29 at page 2.

in light of Guyre et al (Journal of Immunology (1989) 143:1650-1655). Applicants note that the Office has used Guyre et al. as a part of an inherency rejection.

Claim 1, as amended, is directed toward a molecular adjuvant: one component of the adjuvant is **a C5a response selective agonist** having specific binding affinity for a C5a receptor of an antigen presenting cell where the selective agonist is covalently linked to an immunogen. The specification provides a detailed definition regarding exactly what constitutes "specific binding affinity" as it describes the binding of the **C5a response selective agonist** to the C5a receptor of antigen presenting cells as:

> ..."specific binding" as used herein refers to the interaction between the targeting ligand moiety [C5a response selective agonist] and a characteristic determinant on the antigen presenting cell population [C5a receptor] sought to be activated in accordance with this invention to the substantial exclusion of determinants present on other cells.[3]

Romet-Lemonne disclose use of a binding agent that specifically binds to an **FcγRI receptor** of an antigen-presenting cell and is able to trigger receptor function when complexed to an antigen.[4] Romet-Lemonne et al.s' binding agent is not a **C5a response selective agonist**.

Guyre et al, similar to Romet-Lemonne et al., characterize **FcγRI receptor** function on antigen presenting cells.[5] They disclose a class of monoclonal antibodies specific for the FcγRI receptor that are able to trigger receptor function.

Nowhere does the cited art disclose a receptor agonist that **selectively** binds to a **C5a receptor** of an antigen presenting cell, as required by the molecular adjuvant of claim 1. A claim is anticipated only if each and every element as set forth in the claim is described in a single prior art reference.[6] Because neither Romet-Lemonne et al. nor Guyre et al. disclose every element of claim 1, the references do not anticipate claim 1. Moreover, claims 10-11, 13 and 16-17 contain all of the limitations of claim 1, and therefore, are also not anticipated by the cited art for all of the reasons detailed with respect to claim 1.

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[3]See specification at page 13.

[4]Paper 29 at page 3.

[5]Guyre et al., at page 1650.

[6]Verdegaal Bros. v. Union Oil Co. of Calif., 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). See MPEP §2131.

B. *The molecular adjuvant of claims 1, 7, 10-11, 13 and 16-17 is not anticipated under 35 U.S.C. 102(e) by the composition disclos d in Laus t al. in light of Barclay et al.*

Reconsideration is requested of the rejection of claims 1, 7, 10-11, 13 and 16-17 under 35 U.S.C. 102(e) as being anticipated by Laus et al. (U.S. 5,976,546) in light of Barclay et al. Applicants note that the Office has used Barclay et al. as a part of an inherency rejection.

Laus et al. disclose compositions for eliciting a cytotoxic T cell response where the composition comprises a dendritic cell binding protein linked to a polypeptide antigen. The composition is targeted to an antigen presenting cell by the dendritic cell binding protein selected from **GM-CSF, IL-1, TNF, IL-4, CD40L, CTLA4, CD28 and FLT-3**.[7] Laus et al.s' dendritic cell binding protein is not a **C5a response selective agonist**.

Barclay et al. merely disclose biochemical characteristics and physiological distribution of the **GM-CSF** binding protein on various cell types. But Barclay et al. do not disclose that GM-CSF binds to a C5a receptor of an antigen presenting cell in a specific manner, as required by the adjuvant of claim 1.

Nowhere does the cited art disclose a receptor agonist that **selectively** binds to a **C5a receptor** of an antigen presenting cell, as required by the molecular adjuvant of claim 1. Since neither Laus et al. nor Barclay et al. disclose every element of claim 1, the references do not anticipate claim 1. Moreover, claims 7, 10-11, 13 and 16-17 contain all of the limitations of claim 1, and accordingly, are also not anticipated by the cited art for all of the reasons detailed with respect to claim 1.

C. *The molecular adjuvant of claims 1, 10-11 and 16-17 is not anticipated under 35 U.S.C. 102(a) by the composition disclosed in Sandlie et al.*

Reconsideration is requested of the rejection of claims 1, 10-11 and 16-17 under 35 U.S.C. 102(a) as being anticipated by Sandlie et al. (WO 96/22377).

Sandlie et al. disclose recombinant fusion proteins in which an antigenic peptide is inserted into a non-CDR loop of an immunoglobulin. Sandlie et al. also disclose that the immunoglobulin component can be taken up by binding of its **Fc region to an Fc receptor**.[8] Sandlie et al.s' binding agent is not a **C5a response selective agonist**.

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[7]Laus et al. at column 5, lines 29-33.

[8]Paper 29 at page 5. *See also*, Sandlie et al. at page 7, lines 1-4 ("The non-CDR loops utilized may be in the CH1 or C_k region between the hinge region and the variable

Since Sandlie et al. do not disclose a receptor agonist that **selectively** binds to a **C5a receptor,** as required by claim 1, the reference does not anticipate claim 1. Furthermore, claims 7, 10-11, 13 and 16-17 contain all of the limitations of claim 1, and accordingly, are also not anticipated by the cited art for all of the reasons detailed with respect to claim 1.

III. 35 U.S.C. § 103(a) Rejections

A. *The molecular adjuvant of claims 1 and 7 is not rendered obvious by the composition disclosed in Romet-Lemonne et al. in view of Kennedy et al.*

Reconsideration is requested of the rejection of claims 1 and 7 under 35 U.S.C. 103(a) as being obvious over Romet-Lemonne et al. in view of Kennedy et al.

Claim 1, as amended, is directed toward a molecular adjuvant: one component of the molecular adjuvant is **a C5a response selective agonist** having specific binding affinity for a C5a receptor of **an antigen presenting cell**.

To establish a *prima facie* case of obviousness, the prior art taken singly or collectively, must disclose each element of the claimed invention. Romet-Lemonne et al., as detailed in II A, does not disclose or suggest each element of molecular adjuvant of claim 1.

Moreover, Kennedy et al. also do not disclose each element of the molecular adjuvant of claim 1. Kennedy et al. disclose numerous reagents for coupling proteins and various applications that utilize protein conjugates. Nowhere do Kennedy et al. disclose or suggest the use of a a C5a response selective agonist as a component of a molecular adjuvant, as required by claim 1.

The cited art does not disclose or suggest each element of the molecular adjuvant of claim 1. The Office has therefore not established a *prima facie* case that the subject matter of claim 1 would have been obvious to a person of ordinary skill in the art at the time of applicants' invention in view of Romet-Lemonne et al. and Kennedy et al. Moreover, claim 7, which depends from claim 1, is patentable over the cited art for all of the reasons identified for claim 1.

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region. This would apply particularly where the Ig is a Fab fragment. Alternatively or additionally, *loops in the Fc region can be used.*").

B. *The molecular adjuvant of claims 1, 10 and 13-14 is not rendered obvious by the composition disclosed in Romet-L monne et al. or Laus et al. in view of Sipe et al.*

Reconsideration is requested of the rejection of claims 1, 10 and 13-14 under 35 U.S.C. 103(a) as being obvious over Romet-Lemonne et al. or Laus et al. in view of Sipe et al (5,262,303).

Romet-Lemonne et al., as detailed in II A, does not disclose or suggest each element of molecular adjuvant of claim 1.

Laus et al., as detailed in IIB, also do not disclose or suggest each element of the molecular adjuvant of claim 1.

Moreover, Sipe et al. also does not disclose or suggest each element of the molecular adjuvant of claim 1. Sipe et al. disclose an assay to detect adherent proteins, such as serum amyloid A, apolipoprotein, and various cytokines, in a composition comprising a number of different proteins. Nowhere do Sipe et al. disclose or suggest using a **C5a response selective agonist** as a component in a molecular adjuvant, as required by claim 1.

The cited art does not disclose or suggest each element of the molecular adjuvant of claim 1. The Office has therefore not established a *prima facie* case that the subject matter of claim 1 would have been obvious to a person of ordinary skill in the art at the time of applicants' invention in view of Romet-Lemonne et al., Laus et al. and Sipe et al. Moreover, claims 10 and 13-14, which depend from claim 1, are patentable over the cited art for all of the reasons identified for claim 1.

C. *The molecular adjuvant of claims 1, 10 and 12 are not rendered obvious over Romet-Lemonne et al. or Laus et al. or Sandlie et al. in view of Finn et al. or McKenzie et al.*

Reconsideration is requested of the rejection of claims 1, 10 and 12 under 35 U.S.C. 103(a) as being obvious over Romet-Lemonne et al., Laus et al., or Sandlie et al. in view of Finn et al. (5,827,666) or McKenzie et al. (5,989,552).

Romet-Lemonne et al., Laus et al., and Sandlie et al., as detailed in II. A., II.B. and II.C., respectively, do not disclose or suggest using a **C5a response selective agonist** as a component in a molecular adjuvant, as required by claim 1.

Finn et al. generally disclose novel synthetic muc-1 peptides and methods for making and using muc-1 peptides. McKenzie et al. disclose immunogenic conjugates of a human mucin polypeptide and oxidized mannose. But nowhere do either Finn et al. or McKenzie et al. disclose or suggest using a **C5a response sel ctive agonist** as a component in a molecular adjuvant, as required by claim 1.

The cited art does not disclose or suggest each element of the molecular adjuvant of claim 1. The Office has therefore not established a *prima facie* case that the subject matter of claim 1 would have been obvious to a person of ordinary skill in the art at the time of applicants' invention in view of Romet-Lemonne et al., Laus et al., or Sandlie et al. in view of Finn et al. (5,827,666) or McKenzie et al. (5,989,552). Moreover, claims 10 and 12, which depend from claim 1, are patentable over the cited art for all of the reasons identified for claim 1.

IV. Conclusion

In light of the foregoing, Applicants request withdrawal of claim rejections, entry of claim amendments, and solicit an allowance of the amended claims. The Examiner is invited to contact the undersigned attorney should any issue remain unsolved.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Replace claim 1 with:

1. A molecular adjuvant for enhancing an immune response to an immunogen comprising: [a targeting ligand] a C5a response selective agonist having binding affinity for [a characteristic determinant] a C5a receptor of an antigen presenting cell, said [targeting ligand] selective agonist being covalently linked to said immunogen, whereby binding of said molecular adjuvant to said antigen presenting cell C5a receptor activates said antigen presenting cell, effecting delivery of said immunogen to an antigen presenting pathway of said antigen presenting cell.

This does not show markings relative to the version of claim 1 presented in amend E1

Delete claim 3.

Replace claim 4 with:

4. A molecular adjuvant as claimed in claim 1, wherein said [targeting ligand] selective agonist [binds specifically to a C5a receptor and] is selected from the group consisting of C5a and a peptide agonist analog of C5a comprising the C-terminal ten residues of C5a.

Replace claim 5 with:

5. A molecular adjuvant as claimed in claim 4, wherein said [targeting ligand] selective agonist is a peptide comprising the sequence YSFKPMPLaR, which is Sequence I.D. No. 1.

Replace claim 6 with:

6. A molecular adjuvant as claimed in claim 1, comprising a [targeting ligand] selective agonist and an immunogen having the sequence YKQGGFLGLYSFKPMPLaR, which is Sequence I.D. No. 2.

Replace claim 7 with:

7. A molecular adjuvant as claimed in claim 1, wherein said [targeting ligand] selective agonist and said immunogen are linked by a spacer moiety.

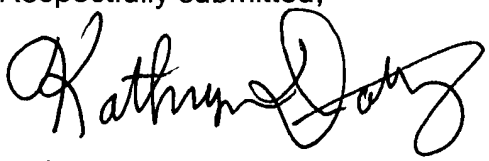
Delete claim 8.

Delete claim 9.

Claim 26: NEW

The Commissioner is hereby authorized to charge any underpayment and credit any overpayment of government fees to Deposit Account No. 19-1345.

Respectfully submitted,



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